

SECTION 01 70 00

EXECUTION REQUIREMENTS

PART I - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General and Special Provisions of the Contract, including General Conditions and other Division I Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. General installation of products.
 - 4. Progress cleaning.
 - 5. Starting and adjusting.
 - 6. Protection of installed construction.
 - 7. Correction of the Work.
- B. Related Sections
 - 1. Division I Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
 - 2. Division I Section "Submittal Procedures" for submitting surveys.
 - 3. Division I Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
 - 4. Division 2 through 16 Sections for specific requirements for execution of the Work in those Sections.

1.3 SUBMITTALS
(Not Used)

PART 2 - PRODUCTS
(Not Used)

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of underground, in-slab, and in-wall utilities and other construction affecting the Work.
 - 1. Before construction, verify the location and points of connection of telecommunications, cable and in-slab, and in-wall electrical services.
 - 2. Furnish location for work related to Project that must be performed by public utilities serving Project site.

- B. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present, where indicated, for compliance with requirements, for installation tolerances and other conditions affecting performance. Record observations.
1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - a. Description of the Work.
 - b. List of detrimental conditions, including substrates.
 - c. List of unacceptable installation tolerances.
 - d. Recommended corrections.
 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrications. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a Request for Information (RFI) to the Architect/Owner. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

- A. Verifications: Before proceeding to lay out the Work, verify layout information shown on drawings, in relation to existing building features. If discrepancies are discovered, notify Architect/Owner promptly.
- B. General: Lay out the Work using acceptable practices.
1. Establish benchmarks and control points to set lines and levels at construction and elsewhere as needed to locate each element of the Project.
 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 3. Inform Installers of lines and levels to which they must comply.

4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify Architect/Owner when deviations from required lines and levels exceed allowable tolerances.

3.4 FIELD ENGINEERING *(Not Used)*

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturers written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place accurately located and aligned with other portions of the Work.
 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connection together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction forces.
- B. Coordination: Coordinate construction and operation of the Work with work performed by Owner's construction forces.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

3.7 PROGRESS CLEANING

- A. General: clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 1. Remove liquid spills promptly
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division I, Section "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at the time of Substantial Completion.
- B. Comply with manufacturers written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division I, Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified prior condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

PART 4 – MEASUREMENT AND PAYMENT

- 4.1 Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Schedule of Values, incorporated into the General Conditions or incidental to the Work of this Contract.

END OF SECTION 01 70 00

SECTION 01 73 10

CUTTING AND PATCHING

PART I - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General and Special Provisions of the Contract, including General Conditions and other Division I Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for cutting and patching.
- B. Related Sections
 - 1. Division 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut or patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or results in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut or patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original installer, comply with original installer's written recommendations.
 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean, piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

PART 4 – MEASUREMENT AND PAYMENT

- 4.1 Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Schedule of Values, incorporated into the General Conditions or incidental to the Work of this Contract.

END OF SECTION 01 73 10

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART I - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General and Special Provisions of the Contract, including General Conditions and other Division I Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Contract Closeout, including, but not limited to, the following:
 - 1. Inspection Procedures
 - 2. Final Cleaning
- B. Related Sections
 - 1. Division I Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
 - 2. Division I Section "Execution Requirements" for progress cleaning of Project site.
 - 3. Division I Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 4. Division I Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 5. Division 2 through 16 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBMITTALS

- A. Final Site Survey
- B. Maintenance Contracts
- C. Operation and Maintenance Manuals
- D. Product Warranties and Bonds
- E. Project Record Documents
- F. Spare Parts and Maintenance Materials

1.4 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

3. Obtain and submit releases permitting the City unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 4. Prepare and submit Project Record Documents, Operation and Maintenance Manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
 5. Deliver tools, spare parts, extra materials, and similar items to location designated by the City. Label with manufacturer's name and model number where applicable.
 6. Make final changeover of permanent locks and deliver keys to the City of San Jose. Advise City personnel of changeover in security provisions.
 7. Complete startup testing of systems.
 8. Submit test/adjust/balance records.
 9. Submit changeover information related to City occupancy, use, operation, and maintenance.
 10. Complete final cleaning requirements, including touchup painting.
 11. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Coordinate inspection schedule with Owner to accommodate appropriate Owner's General Service personnel to be present during the final inspection.
 2. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 3. Results of completed inspection will form the basis of requirements for final Completion.

1.5 FINAL COMPLETION/FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion/Final Acceptance.
1. Submit a final Application for Payment according to Division I Section, "Payment Procedures."
 2. Submit certified copy of Architect's and Owner's Substantial Completion inspection list of items to be completed or corrected (Punch List), endorsed and dated by Architect and Owner. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Instruct City personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes/CD.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Coordinate inspection schedule with Owner to accommodate appropriate Owner's General Service personnel to be present during the final inspection.
 2. Reinspection: Request reinspection when the Work identified in previous inspection as incomplete is completed or corrected.

1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit seven (7) copies of list to Architect and one (1) copy to City. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A or approved equivalent.
 - 1. Organize list of spaces in sequential order.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 - 3. Include the following information at the top of each page:
 - a. Project name
 - b. Date
 - c. Name of City of San Jose
 - d. Name of Architect
 - e. Name of Contractor
 - f. Page Number

1.7 COORDINATION

- A. Coordinate Closeout submittal requirements with City of San Jose:
 - 1. General Conditions of the Contract
 - 2. City Construction/Project Manager

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 – EXECUTION

3.1 CLOSEOUT PROCESS

- A. Final Site Survey
 - 1. Include with record documents and instructions
- B. Maintenance Contracts: no requirements
- C. Operations and Maintenance Data: Contractor submits to Architect at Closeout meeting.
 - 1. Submit draft within 60 days of Contract execution.
 - 2. Submit 1 original hard copy and 1 electronic format (PDF format) upon Project Acceptance.
- D. Project Warranties and Bonds: Contractor submits to Architect at Closeout meeting.
 - 1. Submit draft within 60 days of contract execution.
 - 2. Submit 1 original hard copy and 1 electronic file (PDF format) upon Project Acceptance.
- E. Project Record Documents
 - 1. Maintain an "As Built" set of documents at the project site at all times.

2. Submit CAD/Computer Record Documents and one hard copy directly to Architect at closeout meeting. CAD documents shall be in Autocad *.dwg format compatible with Autocad 2006 or 2007. Computer record documents shall be compatible with Microsoft Office Suite 2003 and *.pdf format.

F. Spare Parts and Maintenance Materials: Contractor submits to City at Closeout meeting.

1. Submit draft within 60 days of contract execution.
2. Submit items to City with transmittal upon project acceptance.

G. Project Closeout Meeting.

3.1 FINAL CLEANING

A. Complete the following cleaning operations before requesting inspection for certificate of Substantial Completion for the entire Project or for a portion of the Project:

1. Clean Project site, yard, and ground, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste materials, litter, and other foreign substances.
2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
3. Remove tools, construction equipment, machinery, and surplus materials from Project site.
4. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
5. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
6. Sweep concrete floors broom-clean in unoccupied spaces.
7. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
8. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
9. Remove labels that are not permanent.
10. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or which show evidence of repair or restoration.
 1. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
11. Clean ducts, blowers, and coils if units were operated without filters during construction.
12. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
13. Replace parts subject to unusual operating wear.
14. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
15. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grilles.
16. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
17. Leave Project clean and ready for occupancy.

- B. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on City property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

PART 4 – MEASUREMENT AND PAYMENT

- 4.1 Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Schedule of Values, incorporated into the General Conditions or incidental to the Work of this Contract.

END OF SECTION 01 77 00

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART I - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General and Special Provisions of the Contract, including General Conditions and other Division I Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Operation and maintenance documentation directory
 - 2. Operation manuals for system, subsystems, and equipment
 - 3. Maintenance manuals for the care and maintenance of systems and equipment
- B. Related Sections
 - 1. Division I Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
 - 2. Division I Section "Closeout Procedures" for general closeout procedures
 - 3. Division I Section "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals
 - 4. Division 2 through 16 Sections for specific operation and maintenance requirements for the Work in those Sections.

1.3 SUBMITTALS

- A. Final Submittal: Submit two (2) copies of each manual in final form at least ten (10) days before final inspection to the Architect and the Owner. Architect and Owner will return copy with comments within ten (10) days after final inspection.
 - 1. Correct or modify each manual to comply with Architect and Owner's comments. Submit one (1) copy of each corrected manual within 10 days of receipt of comments.
- B. Electronic Format: Submit computerized compact disk (CD) (PDF format) of materials and finish data.

1.4 COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized services representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 MANUFACTURERS' MANUALS FOR EQUIPMENT AND SYSTEMS

- A. Description of unit and component parts:
 - 1. Function, normal operating characteristics and limiting conditions.
 - 2. Complete nomenclature and commercial part number of replaceable parts.

B. Maintenance

1. Routine care
2. Guide to trouble shooting
3. Disassembly, repair and re-assembly
4. Alignment, adjusting and checking
5. Parts list, illustrations, assembly drawings and diagrams required for maintenance

2.2 ELECTRONIC FORMAT

- A. As-Constructed Specifications: PDF file plus one hardcopy printout in 3 ring binders, updated with the following annotations for each component or specification section as appropriate:
1. Requirements of General Conditions
 2. Clear differentiation between bid options and actual installed items
 3. Manufacturer, trade name, catalog number and supplier of each product and item or equipment actually installed.
 4. Color, texture, pattern.
 5. Changes made by Addendum, Change Order, Alternate, and Field Order.
 6. Per General Conditions, cross-reference each specification section to a master list of subcontractor, suppliers, and installers, complete with addresses and telephone numbers.

PART 3 – EXECUTION

3.1 MANUAL PREPARATION

- A. Product Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- C. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- D. Comply with Division I Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

PART 4 – MEASUREMENT AND PAYMENT

- 4.1 Separate measurement or payment will be made in accordance with the provisions of Section 01 29 00 – "Payment Procedures" as modified by this section. The Contract lump sum price for Operations and Maintenance Data by all required principle subcontractors shall not, in aggregate, be less than one-quarter (1/4) percent of the Total Base Bid amount. Each subcontractor's line item for this section shall be relative to its related component(s) of the Schedule of Values and subject to review and approval by the City.
- A. Schedule of Values: Include separate line item(s) on the Schedule of Values for operation and maintenance data submission by the each of the required principal subcontractors.

- B. Payment: Payments for each principle subcontractor's operations and maintenance data will be made only when such submittals occur as specified in this Section and as indicated in the Contractor's approved schedules.

END OF SECTION 01 78 23

SECTION 01 78 36

WARRANTIES

PART I - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General and Special Provisions of the Contract, including General Conditions and other Division I Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for warranties.
- B. Related Sections
 - 1. Division 2 through 16 Sections for specific requirements for warranties of the Work in those Sections.
- C. Compile required and incidental warranties as required by the Contract Documents.
- D. These warranties shall be in addition to and not a limitation of other rights the City of San Jose may have against the Contractor under the Contract Documents, and which may be prescribed by law, regardless of wording of warranty.

1.3 SUBMITTALS:

- A. Submittal Time: Submit written warranties on request of the City for designated portions of the Work where commencement of warranties other than date of Final Acceptance is indicated.
 - 1. Submit with within ten (10) days after first operation.
- B. Submittal Form:
 - 1. Organize warranty documents executed by subcontractors, installers, suppliers, and manufacturers in an orderly sequence based on the Table of Contents of the Project Manual.
 - 2. Provide Table of Contents and assemble in binder with durable plastic cover, clearly identified regarding extent of contents.
 - a. Bind warranties and bonds in heavy duty 3-ring, white vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive letter size paper. Fold large sheets to fit.
 - b. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of the Installer.
 - c. Identify each binder on the front and spine with the typed title, "WARRANTIES," Project name, and the name of the Contractor.
 - 3. Include an additional copy of each warranty in the operation and maintenance manuals.
 - 4. Electronic Format: Submit computerized compact disk (CD)s of warranties in PDF format.

- C. Warranty Form: Use form acceptable to the City; completed form shall not detract from or confuse interpretation of Contract Documents.
1. Manufacturer shall countersign warranty.
 2. Subcontractor and installer shall countersign warranty where specified.
 3. Submit warranties typed on Contractor's letterhead if for entire Work and on subcontractor's letterhead if for work of specification section. Use following form:

WARRANTY FOR _____

We hereby warrant that the _____ which we have provided in the _____ has been completed in accordance with the requirements of specification Section _____ and the Contract Documents.

We agree to repair or replace any or all of our work, together with any other adjacent work which may be displaced by so doing, that may prove to be defective in its workmanship or material within a period of _____ from the date of acceptance of the above named project by the Owner; and we also agree to repair any and all damages resulting from such defects, all without additional expense to the Owner, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with the above mentioned conditions within 7 days after being notified in writing by the Owner, we collectively or separately do hereby authorize the Owner to proceed to have such defective work repaired or replaced and

made good at our expense, and we will honor and pay the costs and charges therefore upon demand.

Signed: _____ Date _____

Subcontractor's Name: _____

Address: _____

License Number: _

Countersigned: _____ Date _____

Contractors Name: _____

Address: _____

License Number: _

or

Manufacturer's Name: _____

Address: _____

OR

Signed: _____ Date _____

Contractors Name: _____

Address: _____

License Number: _

- D. Provide duplicate, notarized copies. Execute and assemble documents from subcontractors, suppliers, and manufacturers. Verify compliance with Contract Documents.
1. Provide table of contents and assemble in binder with durable plastic cover.
 2. Identify on or readable through the front cover with the project name and address, the Contractor's name and address and the title 'WARRANTIES AND BONDS.'
- D. Final Warranties: Submit final warranties prior to final application for payment.
1. For equipment put into use with Owner's permission during construction, submit within ten days after first operation.
 2. For items of Work delayed materially beyond date of Final Acceptance, provide updated submittal within ten (10) days after acceptance, listing date of acceptance as start of warranty period.
- E. Provide information for Owner's personnel regarding proper procedure in case of failure and instances that might affect validity of warranty.

PART 2 - PRODUCTS

2.1 PRODUCT WARRANTIES AND BONDS

- A. When provided, extended term warranties must comply with the following:
1. Be underwritten by the product or system manufacturer
 2. Provide coverage term from date of Project Final Acceptance
 3. Provide full replacement product or material with no dollar limit.
 4. Incremental Warranties (i.e. "5 plus 5") are not acceptable.

PART 3 – EXECUTION

3.1 WARRANTIES

- A. Warranties are intended to protect the City against failure of work and against deficient, defective and faulty materials and workmanship, regardless of sources.
- B. Limitations: Warranties are not intended to cover failures that result from:
1. Unusual or abnormal phenomena of the elements.
 2. City misuse, maltreatment or improper maintenance of work.
 3. Vandalism after Final Acceptance,
 4. Insurrection or acts of aggression including war.
- C. Related Damages and Losses: Remove and replace work which is damaged as result of failure, or which must be removed and replaced to provide access for correction of warranted work.
- D. Warranty Reinstatement: After correction of warranted work, reinstate warranty for corrected work to date or original warranty expiration, but not less than half original warranty period.

- E. Replacement Cost: Replace or restore failing warranted items without regard to anticipated useful service lives.
- F. Rejection of Warranties: The City of San Jose reserves the right to reject unsolicited and coincidental product warranties that detract from or confuse interpretations of Contract Documents.

3.2 WARRANTY SCHEDULE: Refer to the specific Specification Section for warranty requirements. Warranties are required, but not limited to the following items:

PART 4 – MEASUREMENT AND PAYMENT

- 4.1 Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Schedule of Values, incorporated into the General Conditions or incidental to the Work of this Contract.

END OF SECTION 01 78 36

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART I - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General and Special Provisions of the Contract, including General Conditions and other Division I Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings
 - 2. Record Specifications
 - 3. Record Product Data
- B. Related Sections
 - 1. Division I Section "Closeout Procedures" for general closeout procedures
 - 2. Division I Section "Operation and Maintenance Data" for operation and maintenance manual requirements
 - 3. Division 2 through 16 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set marked up Record Drawings based on as-built conditions.
- B. Record Specifications: Submit one copy of marked up Project Specifications based on as-built conditions, including addenda and contract modifications.
- C. Record Product Data: Submit one copy of each Product Data submittal.
 - 1. Where record Product Data is required as part of operation and maintenance manuals, submit marked up Product Data as an insert in manual instead of submittal as Record Product Data.
- D. Final Record Documents: Upon receipt of items above, the Architect will review the documents and prepare the final Record Documents for submittal to the City in hard copy and electronic format.
- E. Final Electronic Files (AUTOCAD V2006 or V2007 *.dwg, and PDF format)

1.4 RESTRICTIONS

- A. "As Constructed" Closeout submittals are NOT required for:
 - 1. Demolition
 - 2. Temporary Construction
 - 3. Reference Documents provided by the City.

1.5 QUALITY ASSURANCE

- A. Label Closeout submittals to clearly identify:
 - 1. Submittal, including specifications section number
 - 2. Project – Specific Title
 - 3. Architect or Prime Consultant
 - 4. Owner: City of San Jose
 - 5. Date
 - 6. “As Constructed” when applicable

PART 2 - PRODUCTS

2.1 FIELD RECORD DOCUMENTS

- A. Maintain at the job site one “As Constructed” active record copy of:
 - 1. Contract Documents
 - 2. Project Manual
 - 3. Specifications
 - 4. Addenda
 - 5. Shop Drawings
 - 6. Change Orders and other modifications to the Contract
 - 7. Field inspection reports, permits, approvals, test reports, certifications, and other documents used in the construction of the facility or the fabrication of its components and systems.
- B. Accurately mark these documents with all changes made during construction as designated below.
- C. Store Project Record Documents apart from documents used for construction.
- D. Maintain Project Record Documents in a clean legible condition.
- E. Label each document “PROJECT RECORD COPY” in large, bold letters.
- F. Keep record documents current.
- G. Do not permanently conceal any work until required information has been recorded.
- H. Make the Project Record Documents available at all times for the City’s, Architect’s, or Engineer’s inspection.

2.2 RECORD DRAWINGS

- A. Record Prints: Maintain one set of black-line white prints of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity obtaining the record data, whether individual or entity is installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.

- c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 2. Content: Types of items requiring marking, include, but not limited to, the following.
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings
 - c. Locations and depths of underground utilities
 - d. Revisions to routing of piping and conduits.
 - e. Revisions to electrical circuitry.
 - f. Actual equipment locations.
 - g. Duct size and routing.
 - h. Locations of concealed internal utilities
 - i. Changes made by Change Order or Construction Change Directive.
 - j. Changes made following Architect's written orders.
 - k. Field records for variable and concealed conditions.
 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 5. Mark important additional information that was either shown schematically or omitted from the original Drawings.
 6. Note: Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Architect's Review: Immediately before inspection for Certification of Substantial Completion, review marked-up Record Prints with Architect.
1. Incorporate changes and additional information previously marked on Record Prints, Erase, redraw, and add details and notations where applicable.
 2. Refer instances of uncertainty to Architect for resolution.
- C. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
 2. Consult the Architect for proper scale and scope of detailing and notations required, recording the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- D. Format: Identify and date each Record Drawing; include the designation "PROJECT AS-BUILT DRAWINGS" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Identification: As follows:
 - a. Project Name
 - b. Date
 - c. Designation "RECORD AS-BUILT DRAWINGS."

- d. Name of Architect
- e. Name of Contractor

2.3 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the propriety name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of the manufacturer, supplier, installer, and other information necessary to provide a record of selection made.
 - 4. For each principal product, indicate whether Record Product Data had been submitted in operation and maintenance manuals instead of submitted a Record Product Data.
 - 5. Note related Change Orders, Record Product Data and Record Drawings where applicable.

2.4 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

2.5 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

2.6 CAD AND REPRODUCIBLE RECORD DOCUMENTS

- A. Contract closeout, the prime consultant is responsible for developing permanent Project Record Documents by transcribing information contained in the Field Record Documents onto original (electronic) media.
- B. As-Constructed Specifications: Word Processing file plus one hardcopy printout in 3-ring binders, updated with the following annotations for each component or specification section as appropriate:
 - 1. Requirements of General Conditions
 - 2. Clear differentiation between bid options and actual installed items
 - 3. Manufacturer, trade name, catalog number and supplier of each product and item or equipment actually installed.
 - 4. Color, texture, pattern.
 - 5. Changes made by Addendum, Change Order, Alternate, and Field Order.
 - 6. Per General Conditions, cross-reference each specification section to a master list of subcontractor, suppliers, and installers, complete with addresses and telephone numbers.
- C. As-Constructed Product/Finish/Equipment Schedules: Text, Spreadsheet or Database file plus one reproducible plot updated with the following annotations:

1. Manufacturer, trade name, catalog number and supplier of each product and item or equipment actually installed.
 2. Color, texture, pattern.
 3. Changes made by Addendum, Change Order, Alternate, and Field Order.
- D. As-Constructed Record Construction Drawings: CAD file plus one copy media plot updated with the following annotations and corrections:
1. Addenda
 2. Bid Alternates accepted/not accepted
 3. Change Orders, Field Orders, Supplemental Instructions
 4. Differing/Uncovered conditions
 5. Size/position/dimensional differences exceeding 4 inches
 6. Locations of concealed or buried utilities and systems
 7. Other items not originally indicated.
- E. Supplemental Documents
1. Per CSI Uniform Drawing System
 2. Required – As-Constructed Annotations:
 - a. Cross reference both original document and supplement to each other
 - b. Identify supplemental documents in Index/Table of Contents
- F. Approved Shop Drawings:
- c. CAD file plus one copy media plot updated per As-Constructed Record Construction Drawing.
 3. Hardcopy reproduction of original approved shop drawings is required for all other specification sections.
 4. Submittal log, complete with review comments, corrections, and authorizations
- G. Project Files
1. One complete set of project administration records identified in Section 01 30 00.

PART 3 – EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project record Documents as they occur; do not wait until the end of the Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

PART 4 – MEASUREMENT AND PAYMENT

- 4.1 Separate measurement or payment will be made in accordance with the provisions of Section 01 29 00 – “Payment Procedures” as modified by this section. The Contract lump sum price for all Project Record Documents by the Contractor and all subcontractors shall not, in aggregate, be less than one-quarter (1/4) percent of the Total Base Bid amount. Each line item for this section shall be relative to its related component(s) of the Schedule of Values and subject to review and approval by the City.
- A. Schedule of Values: Include separate line item(s) on the Schedule of Values for Project Record Documents by the Contractor and each of the required principal subcontractors.
 - B. Payment: Payments for each principle subcontractor’s demonstration and training will be made only when such activities occur as planned and as indicated in the Contractor’s approved schedules.

END OF SECTION 01 78 39

SECTION 01 82 50

SUPPORT FROM BUILDING STRUCTURE

PART 1 GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings, General and Special Provisions of the Contract, including General Conditions, Divisions 2 through 16 Specification Sections, and other Division I Specification Sections, apply to this Section.

1.02 DESCRIPTION:

- A. This section provides guidelines and limitations for supporting all mechanical, electrical, plumbing, equipment or architectural items from the building structure, and for seismic bracing for all such items.
- B. Contractor shall design and install all support and bracing systems except as noted. Provide for attachment to portions of the building structure capable of bearing the loads imposed. Design systems to not overstress the building structure.
- C. The Contractor is not required to design support and bracing for items for which the contract documents provide specific attachment, support, and bracing. Seismic bracing is not required for the following items:
 - 1. Gas piping less than 1" inside diameter.
 - 2. Piping in boiler and mechanical equipment rooms less than 1.25" inside diameter.
 - 3. All other piping less than 2.5" inside diameter, unless racked together.
 - 4. All piping and duct suspended by individual hangers 12" or less in length.
 - 5. All rectangle air handling ducts less than 6 square feet in cross sectional area.
 - 6. All round air handling ducts less than 28" in diameter.
 - 7. All electrical conduits less than 2.5" inside diameter, unless racked together.

1.03 QUALITY ASSURANCE

- A. Contractor shall Design and install all support systems to comply with the seismic zone 4 requirements of the 2001 California Building Code (CBC) Chapter 16.
- B. For seismic bracing design and gravity support design Contractor shall use the services of a professional engineer licensed in California.
- C. For seismic bracing for mechanical, electrical and plumbing systems, refer to the Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA), "Seismic Restraint Manual: Guidelines For Mechanical Systems" for guidelines.

1.04 SUBMITTALS:

- A. Submit shop drawings for all substructures and attachment methods.
- B. Submit proposed alternative methods of attachment for review and approval by the Architect, prior to deviating from the requirements given below.
- C. For all seismic bracing systems and gravity support systems, submit structural calculations and details prepared and signed by the Contractor's licensed professional engineer which include all resultant forces applied to the building structure. Do not overstress the building structure. Calculations will be reviewed for compliance with design criteria only.

PART 2 PRODUCTS

2.01 MATERIALS:

- A. Furnish all substructures and fasteners required to comply with the limitations given below. Use materials as specified in the various sections and as appropriate to the use.
- B. Channel framing systems: as specified in Section 05500.

PART 3 EXECUTION

3.01 GUIDELINES & LIMITATIONS:

- A. The Contractor shall coordinate the load requirements from all subcontractors so that no combination of loads exceeds the limitations given below.
- B. In applying formulae (32-1) or (32-2) from the 2001 CBC the value for "Ip" (importance factor) shall be assumed to be no less than 1.5, unless a higher value is required by the CBC.
- C. Contractor shall design and install seismic bracing so as not to ground out vibration and sound isolation items.
- D. All items of mechanical and electrical equipment shall be seismically braced whether such bracing is shown or not.

PART 4 MEASUREMENT AND PAYMENT

- 4.1 Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Schedule of Values, incorporated into the General Conditions or incidental to the Work of this Contract.

END OF SECTION – 01 82 50